

Latest Casualty List From Oversea Forces

KILLED IN ACTION.

LIEUTENANTS.
Kam, Junction City, Ralph S. Busch.
Mans, Northampton, Benjamin L. Curtis.
Mont, Helena, Harold H. Joyer.
N. J. Millville, Marvin Jesse Nabb.
N. Y. Buffalo, Charles B. Cane.
N. L. Newport, Willett Clark Barrett.
Wis, West Ashland, Roy W. Kelly.

SERGEANTS.
Ill, Chicago, Heinrich Vossler.
Iowa, Oskaloosa, Sol Morris.
N. J. Rutherford, Walter DeForest.
N. Y. Endicott, Ceyler G. Cronk.
N. Y. New York, Michael Lynch.
N. Y. New York, Laurence F. Gaudin.
Ohio, Columbus, Curtis G. Bender.
Pa, Sharon Hill, Dewitt C. Cowan.
Pa, Milton, William E. Lehman.
Wis, Fond du Lac, Anthony N. Halimann.

CORPORALS.
Ala, Clavies, David Thompson.
Ala, Abbeville, Henry L. Bush.
Ala, Laurel, Lester D. Crowder.
Ala, Selma, Andrew L. Eakens.
Ala, Greenville, James Bush.
Ala, Prichard, James T. Griffith.
Ala, Rome, Pennie Spence.
Ill, Chicago, Fred O. Weiberg.
Iowa, Battle Creek, Vinton C. Bradshaw.
Mich, Breton, Joe William Bohacek.
Mich, Big Rapids, Albert Clark Wakeman.
Mich, Maple Rapids, Orin Hudson Riker.
Miss, Minneapolis, Harold Falke.
Miss, Columbus, Hugh E. Keenan.
Mont, Forest Grove, Ralph A. Sanderson.
N. Y. New York, William G. Knowlton.
Pa, Homestead, Jesse Acker.
Pa, Reading, Floyd Bowers.
Pa, New Holland, Martin L. Moore.
Wash, Seattle, Martin A. Stommer.

MECHANIC.
Mich, Holt, John Henry Buck.
COOK.
N. Y. Clayburg, Frank B. Keyser.
PRIVATE.
Ala, Lanett, Ashburn P. Cox.
Ala, Montgomery, Edward G. Hardy.
Ala, Prichard, Cleveland F. Crake.
Ala, Brewton, Everett H. Brown.
Ala, Calera, John Evans.
Ala, Gadsden, Orie Lipford.
Ala, Gadsden, Ray Thomas.
Ark, Watson, Henry Lovins.
Cal, Hanford, Manuel A. Souza.
Conn, Ridgefield, Everett Day Seymour.
Fla, Greenboro, Claude Mills.
Idaho, Weiser, Donald H. Sprinkle.
Idaho, Jerome, David T. Davis.
Idaho, Netherburg, John Thompson.
Ill, Alhambra, Patrick F. Fagan.
Ill, Freeport, Edward A. Carlsner.
Ill, Maywood, George Hochstetzer.
Ill, Juba, James Clifford Halpall.
Ind, Gary, Hefel G. Good.
Ind, Depue, Clarence M. Bigler.
Ind, Gary, Joseph Krak.
Iowa, Montezuma, Donald E. Blakely.
Iowa, Rockwell, James M. Gallagher.
Iowa, Decatur, Hefel G. Good.
Iowa, Hartley, Arthur W. Kitchoff.
Iowa, Seymour, Charles L. Nye.
Italy, San Vito Lo Capo, P. Tregano.
Juba, Pellegrino.
Kan, Oanga, Clyde E. Keener.
Kan, Lacey, Conrad L. Hard.
Ky, Fulton, Cletis E. Muzzall.
La, Shreveport, William L. Miller.
Mass, Springfield, Louis F. Clamont.
Mass, E. Taunton, Miran A. Silva.
Mich, Detroit, Angelo Fancelli.
Mich, Flint, Raymond G. Black.
Mich, Grand Rapids, Harmon Ray Jones.
Mich, Galien, Walter J. Levin.
Mich, Inlay City, Henry G. Christiesle.
Miss, Tupelo, Beulah G. Marks.
Miss, Taylorsville, Frank W. Henderson.
Miss, Amory, Andrew P. Fears.
Mo, St. Louis, Joseph A. Murphy.
N. J. Princeton, William J. McVey.
N. J. Hamburg, Burton Marshall Cramman.
N. Y. Teaneck, Frank S. Sommer.
N. Y. Brooklyn, Morris Rosenblatt.
N. Y. New York, Daniel Lettore.
N. Y. New York, Domitile J. Dundas.
N. C. Merry Hill, Truman Lazarus Brown.
Ohio, Portsmouth, George Vankirk.
Ohio, Sunbury, George A. Moore.
Ohio, Cleveland, Emil F. Patlik.
Ohio, Girard, Henry James Baker.

Ohio, Akron, Mathias D. Krokos.
Ohio, Lima, George H. Rutledge.
Pa, Irwin, Frank Oblock.
Pa, Erie, Alex. Olcott.
Pa, Erie, Joseph J. Eichelsdorfer.
Pa, Goodeney, Carroll L. Fann.
Pa, Reading, Adolph Hisinger.
Pa, East Freedom, Robert A. Carl.
Pa, Pittsburgh, John Waresky.
Pa, Johnstown, Edward John Butcher.
R. L. Manville, Alfredo Ghili.
Russia, Odessa, Alexander Jernest.
Tenn, Englewood, Charles E. Stansbury.
Tenn, Louisville, Jesse C. Wilcox.
Utah, Salt Lake City, Elias Mabarak.
Va, Blackstone, Charles Edgar Kretz.
Va, Waterloo, Miller Riley.
Va, Warrenton, John Conner.
Va, Richmond, Benjamin Martin.
Va, Milwaukee, Joseph Lesakovich.
Wis, Berlin, Tony Cramp.

DIED OF WOUNDS.
SERGEANTS.
Conn, Norwich, Robert O. Fitch.
Ky, Manchester, Lee Hacker.
CORPORALS.
Mich, Onaway, Edward Mangas.
Mich, Newburg, Paul Ellis Steffe.
Neb, Red Cloud, Verlin W. Taylor.
N. Y. New York, Eugene L. Doty.
N. Y. Jersey City, William Behr.
N. Y. New York, James Williams.
Ohio, Plain City, Grever C. Blaney.
PRIVATE.
Ala, Ozark, John McCre.
Conn, Collinsville, Warren Louis.
Idaho, Salmon, Lloyd L. Shaw.
Ill, Kankakee, Harry Ramlin.
Ill, Chicago, Walter R. Kendall.
Iowa, Bristol, Earl E. Midmore.
Mich, Lansing, Frank Huston Escalante.
Mich, Marquette, George Christian Larsen.
Miss, Sack Center, Robert J. Swift.
N. H. Nashua, Eugene O. Hagemann.
N. J. Bayonne, Maurice M. Wolfe.
N. Y. Lacey, Rex S. Hadley.
N. Y. Niagara Falls, Eymont Zaltowski.
N. Y. Brooklyn, Joseph M. Cowen.
N. Y. Glen Cove, Herbert J. Hill.
N. Y. New York, Francis G. Lancaster.
N. Y. Brooklyn, Anthony Michael.
Ohio, Magnetic Springs, Pearl J. Swickard.
Ohio, Dayton, Anthony Zenas.
Ohio, Cleveland, James Zedemir.
Pa, Caledonia, Charles Earl Leane.
Russia, Rosanok, Vilna, Poland, Victor Kilmawski.

DIED OF DISEASE.
CAPTAIN.
Pa, Philadelphia, William F. Guilfoyle.
SERGEANT.
Miss, East Chain, Charles Golden.
CORPORALS.
Ark, Russellville, Shah Bryant.
Miss, Columbia, James L. Hartfield.
Ill, Millersburg, John A. Wakeland.
Mich, Lewiston, Frank Louis Allen.
Pa, Plymouth, John Wentke.
Tenn, Daniels Landing, Will W. Wright.
Tex, Canton, Wilfred Bowers.
Va, Dingy, Luke White.
Wis, Oshkosh, Harry G. Lemkuil.

DIED FROM AEROPANE ACCIDENT.
CAPTAIN.
Mich, Mt. Clemens, Roger W. Janusz.
DIED FROM ACCIDENT AND OTHER CAUSES.
COLONEL.
Ga, Cairo, Joseph W. Cavender.
SADDLER.
Wash, Seattle, Manuel Dorre.
PRIVATE.
Mich, Flint, Harry William Shaw.
Mich, Grand Rapids, Edward Smalling.
N. Y. Brooklyn, James Kileen.
Pa, Erie, John M. Kitchner.
Tex, Anson, Jess Gamble.
WOUNDED SEVERELY.
LIEUTENANT COLONEL.
Mich, Beaver Dam, Philip Jacob Zink.
LIEUTENANTS.
Ill, Canton, Verne Hays.
Mo, Kansas City, William Neischaft.
Neb, Brook, Harry H. Young.
N. Y. Brooklyn, William N. Friedlander.

N. Y. Buffalo, Karl Edward Wilhelm.
N. C. New Bern, Thomas Cowper Daniels.
Ohio, Wyoming, Paul Sutherland.
Ohio, Irlville, Henry Beck.
Pa, Philadelphia, Frank L. Lynch.
SERGEANTS.
Ill, Spring Valley, Edward Francis Timan.
Ind, Marion, Wilbur C. Covey.
Iowa, Council Bluffs, Arthur C. Larson.
Mo, Springfield, Roy William Sturges.
N. Y. Brooklyn, Walter M. Gaffney.
N. Y. Rochester, Edward E. Russell.
N. Y. Brooklyn, George H. Weinbauer.
N. Y. New York, Timothy B. Boyce.
N. Y. New York, Charles C. Westervelt.
Ohio, Chillicothe, Thomas A. Ware.
Pa, Philadelphia, Alexander Hanna.
Wis, Madison, Kent J. Boyer.
Wis, Elroy, Herman Martin Ran.
Wis, Oshkosh, Herbert Charles Meyer.
CORPORALS.
Ala, E. Tallahassee, Clarence M. Lawhorn.
Ill, Chicago, Harry R. Threde.
Ind, Richmond, Thomas H. Graffis.
Iowa, Coon Rapids, Penn Z. H. County.
Iowa, Waterloo, Roland Bellmar.
Ky, Louisville, Clarence Richardson.
Mich, Tower, John Middleton.
Mich, Blanchard, Kirk Nathan Parker.
Mich, Detroit, Steve B. Ceto.
Mich, Ontonagon, Stephen Donald Loranger.
Mich, Clinton, Leo A. Marshall.
Mich, Portland, Samuel J. Proudfoot.
N. Y. New York, James C. Henderson.
N. Y. New York, Joseph G. Brennell.
N. Y. New York, Harry Ladd Schaffer.
N. Y. New York, James J. Fitzpatrick.
N. Y. New York, Benjamin H. Stokke.
N. Y. Brooklyn, Harry Davidson.
N. Y. Buffalo, Raymond T. Flynn.
N. Y. Camp Greene, Lloyd N. Howe.
N. D. Laverne, Alfred Paulson.
Ohio, Washington C. H., Paul G. Clutter.
Ohio, Circleville, Thomas W. Lake.
Pa, Portland, Samuel J. Proudfoot.
Pa, Pottstown, James W. Gleason.
Pa, Johnstown, James D. Kells.
Pa, Berwick, Altona E. Siegfried.
Pennsylvania, Berlet, Benale Branstetter.
Tenn, Clinton, Bert Stamps Elkins.
Tex, Poteet, Polcarpio Holton.
Wash, Wapunga, Guy H. Holton.
Wis, Rhineland, Chester Jewell.
Wis, Oconto Falls, Frank Albert Augustine.
Wis, Sullivan, Gordon Raymond Hix.
Wis, Cambridge, Evan Noyard.
MECHANICS.
Conn, Bridgeport, John W. Olson.
Pa, Hamburg, Frank Charles Sanders.
Pa, Bristol, Theodore C. Mann.
Wis, Milwaukee, Frank Nowicki.
Wis, Ripon, Walter Dahl Sanders.
WAGONER.
N. Y. New York, Andrew Ellett.
PRIVATE.
D. C. WASHINGTON, EVERETT C. KREMER; NEXT OF KIN, MRS. STELLA J. KREMER, 1322 L STREET SOUTHEAST.
Ala, Phenix City, James Leonard Johnston.
Ala, Fulton, Robert Wade.
Ark, Paris, Jess H. Taylor.
Ark, Polono, Edgar Taylor.
Ark, Wild Cherry, Leroy J. Perryman.
Austria, Wies Stockach, Smigut Pavlat, Jasio Deliele, John Strugala.
Cal, San Francisco, Angelo Mascarella.
Cal, Aplos, Everett E. Morgan.
Cal, Norbrook, Martin W. Vann.
Cal, Windsor, Earl Mendenhall.
Col, Haverhill, Hubert E. Warren.
Conn, Union City, John F. Ostrowski.
Conn, Stratford, Matthew McGrath.
Conn, Waterbury, Alphonse Vertefeuille.
Fla, Elfers, Charlie S. Stephens.
Ga, Chamblee, Lester S. Phillips.
Ga, Smyrna, General F. Walte.
Ga, Glenwood, Otis B. Browning.
Ill, Chicago, Michael E. Tyrrell.
Ill, Chicago, Alfred J. Kilburn.
Ill, Chicago, Frank M. Bremner.
Ill, Chicago, Frank Pemberton.
Ill, Morgan Park, Garrett Hook.
Ill, Chicago, Ralph A. Schleicher.
Ill, Stirling, Owen W. Eklund.
Ill, Chicago, Timothy Gordon.
Ill, Henry, Thomas A. Harney.
Ill, Buckley, Herman Hogrefe.
Ill, Chicago, William H. Jones.
Ind, Whitley, Muncie, Thomas L. Burchnell.
Ind, Elwood, John Lorent Metz.
Ind, Goshen, Merrill C. Bloss.
Ind, Salem, George L. Hines.
Ind, Albion, Carl D. Strauss.
Ind, Linden, Everett Josiah Beach.

Iowa, Sioux City, Roy C. Bowers.
Iowa, Piquan, Addison H. Hebb.
Iowa, Clarinda, George E. Lawson.
Iowa, Crawfordville, Dwight Long.
Iowa, Bloomfield, Faye Ashby.
Iowa, Rock Valley, Lawrence J. Benmer.
Ireland, Lakerland, Ballinreagh, County Carra, George Thompson.
Italy, Tolo, Fran Piras.
Italy, Calitella, John Nicolson.
Italy, Piana, Robert P. Minicelli.
Kan, Kansas City, Willie C. Mitchell.
Kan, Leonardville, Herman L. Schwartz.
Ky, Maytown, Hugh Ward.
Ky, Vest, John McDaniel.
Ky, Big Clifty, Eddie Hatfield.
Ky, Garfield, Lonnie Durbin.
Ky, Providence, Earl Barnes.
Ky, Shelbyville, Preston T. Woods.
Ky, Tabor, Kelley Ballard.
Ky, Lebar, Charles Lynch.
Ky, Highland Park, Frank Rhoades.
Ky, Russellville, John Walea Richardson.
La, Breuss Bridge, Edwin Solomon.
La, New Orleans, Charles P. Phillips.
Md, Arlington, John C. Vohrer.
Mass, Pittsfield, Francis A. Fallon.
Mass, Milford, Henry J. Cyr.
Mass, Barre, Thomas Benedict McCormack.
Mass, Worcester, Arthur A. McGuinness.
Mass, Worcester, Charles D. Sprig.
Mass, Greenfield, James Stratus.
Mass, East Boston, Rocco Vitale.
Mass, Chatham, Isaac Hayes Rogers.
Mass, Port Huron, Harry Patrick Acker.
Mich, Adrian, Wilfred V. Bates.
Mich, Detroit, Paul Otto Kalwa.
Mich, Saginaw, Robert James Ahern.
Mich, Wyand, Bernard Johnson.
Mich, Flint, Gilbert Frederick Loeze.
Mich, Detroit, John Dewey McDaniels.
Mich, Muskegon, Edward Neal.
Mich, Muskegon, Claude Jay Pothoff.
Mich, Monroe, Francis N. Rosencoe.
Mich, Portland, Ray Simmons.
Mich, Highland Park, Clyde Everett Taylor.
Mich, Jackson, Fay Wald.
Mich, Ada, John Wierman.
Mich, Ewen, Robert T. Mieshauser.
Mich, Detroit, Clarence Richardson.
Mich, Sault Ste. Marie, Joseph Eschbe.
Mich, Dryden, Frank Hagemeister.
Mich, Palmdale, John Peter Sakines.
Mich, Laurium, James Wears.
Mich, Harbor Beach, William B. Hodgins.
Mich, Atlantic Mine, John Hekkinen.
Miss, St. Paul, Tony J. Delmont.
Miss, Natchez, William E. Brinkley.
Miss, Minneapolis, Vincent H. Mulvihill.
Mo, Neosho, Sherman Krendle.
Mo, Kings City, Walter O. Bettendorf.
Mo, Elsberry, James Finley.
Mo, Excelsior Springs, Charles D. Swinford.
Mo, St. Louis, Henry James Wolff.
Mo, Geneva, John J. Krensch.
Neb, Blue Hill, Carl Muehew.
N. J. Union Hill, Verne Jammerson.
N. J. Bergen, Giuseppe Piacentini.
N. J. Albuquerque, Charles Verano.
N. M., Dawson, Francisco Paradis.
N. Y. Brooklyn, William J. Hanson.
N. Y. New York, Hugh Cannon.
N. Y. New York, Antonio Berini.
N. Y. New York, Luigi Bastone.
N. Y. Buffalo, David Van Allen.
N. Y. New York, Joseph Raymond Weigert.
N. Y. Brooklyn, Julius Wolff.
N. Y. New York, Benjamin Zinsley.
N. Y. New York, Charles J. McQuinn.
N. Y. New York, Matthew P. Mahoney.
N. Y. Buffalo, Joseph Messina.
N. Y. New York, Daniel B. Talion.
N. Y. New York, Giuseppe Taglino.
N. Y. Yonkers, William J. Sullivan.
N. Y. New York, Fred Schuenner.
N. Y. New York, William F. Schmitt.
N. Y. New York, J. Shea.
N. Y. Brooklyn, Martin A. Schenck.
N. Y. Brooklyn, Horace S. Rockwood.
N. Y. New York, Abraham, Soberman.
N. Y. New York, Walton Schorling.
N. Y. New York, Michael J. Quinn.
N. Y. New York, Malachy O'Beirne.
N. Y. Brooklyn, Erich A. Olcan.
N. Y. Brooklyn, Joseph George Mason.
N. Y. Brooklyn, Alex. Maclewie.
N. Y. Yonkers, Matthew Hood.
N. Y. Brooklyn, Daniel J. Leoney.
N. Y. Whitehall, John J. Leoney.
N. Y. New York, John B. McCabe.
N. Y. New York, Charles McDermott.
N. Y. Glen Falls, David C. McDonald.
N. Y. New York, Louis P. Tappett.
N. Y. New York, David J. Moran.
N. Y. New York, Thomas O'Connor.
N. Y. New York, Edward Optis.
N. Y. Brooklyn, Cecilia Palanza.
N. Y. Fulton, Earl E. Paraleye.
N. Y. New York, Nicola Piarro.
N. Y. Lawrence, Joseph Peretti.
N. Y. New York, Louis Peralta.
N. Y. Buffalo, August E. Peralta.
N. Y. Amsterdam, Clarence F. Reiler.
N. Y. Astoria, Robert E. Ring.
N. Y. Canastota, Charles E. Roberts.
N. Y. Brooklyn, Mike Morocowaki.
N. Y. Brooklyn, Robert Emmet O'Hanlon.
N. Y. Clarence, Charles Roncker.
N. Y. East Chester, Charles D. Holdner.
N. C. Fayetteville, Leon C. Blanchard.
N. C. Beaver Creek, Troy Tredeau.
N. C. Fayetteville, Royer H. Hines.
N. D. Midway, Otha Blaine Harding.
N. D. Beach, Lyle Foster.
Ohio, East Liverpool, Richard E. Roberts.
Ohio, Cleveland, Adam Rijmika.
Ohio, Toledo, Frank Samarak.
Ohio, Wadon, Henry Steinbrecher.
Ohio, Patrol, Olyssa G. Taylor.
Ohio, Akron, Roger E. Hines.
Ohio, Georgetown, Wamie Wardlaw.
Ohio, Youngstown, Walter Pletoris.
Ohio, Chillicothe, Charles S. Slough.
Ohio, Cleveland, William M. Westhoff.
Ohio, Newark, Carl L. Wheeler.
Ohio, Venice, Emil H. Webster.
Okla, Muskogee, James E. Hines.
Okla, Oklahoma, Chas. Saunders.
Okla, Binger, William H. Watson.
Okla, Lebanon, Thomas Ross.
Okla, Depew, Willis Coleman Whitaker.
Okla, Cobb, James E. Foote.
Okla, Collinsville, Walter E. Rickford.
Ore, Merrill, Frank H. Vechter.
Ore, Mayzer, James E. Hines.
Pa, Scranton, Stewart L. Evans.
Pa, Freeport, Frank C. Arbusch.
Pa, Philadelphia, George Legrand Jr.
Pa, Lancaster, William Franklin Melan.
Pa, Morrisville, Charles M. Wood.
Pa, Braddock, Harry Samuel Zell.
Pa, York, Bert D. Knuffman.
Pa, Newberry, Charles L. Willis.
Pa, Mechanicsburg, Frank Atley Westfall.
Pa, Berwick, Guy D. Smethers.
Pa, Woodville, Harold Paul Schwaner.
Pa, Carrot, Robert R. Schwaner.
Pa, Scranton, Frank Parloe.
Pa, Northington, Jerome Jay Lewis.
Pa, Hackensack, John E. Hines.
Pa, Lookout, Ellis S. Mandler.
Pa, Pittsburgh, Giovanni Onorato.
Pa, Simpson, Andrew Petrich.
Pa, Ransom, Vincent Pulvencen.
Pa, Trainer, Horace Regent.
Pa, Mulr, Clyde F. Neyer.
Pa, Lancaster, Joseph A. Storck.
Pa, Philadelphia, Stephen W. Steel.
R. I. Providence, Thomas F. Meloney.
S. C. Wallhalla, Ransom L. Holden.

Barney Oldfield Says:



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By BARNEY OLDFIELD.

It is a very remarkable fact that the modern motor car is only about one-eighth efficient. If the car were 100 per cent efficient it would be able to travel in the neighborhood of 400 miles per hour and would consume only about four gallons of gasoline in doing so. By 100 per cent efficiency I mean if all the power generated by the explosion in the combustion chamber was delivered in actual driving force at the rear wheels. As it is seven-eighths of all the power originally generated is wasted in some way or other on its journey back to the driving wheels. The importance of this fact to the private owner lies in the suggestion of vital importance of keeping every part of the machine in perfect condition. If the enormous power loss will not be increased, it is bad enough at best but if the "works" get out of gear it becomes impossible. Suppose we take the case of a car in which these power losses occur.

We shall accept the power generated by the explosion in the combustion chamber as 100 per cent. Practically the first loss occurs, 35 per cent of the original power in the form of heat is dissipated in the cooling water. Another 35 per cent is lost in the exhaust. The muffler and exhaust pipe disposes of another 2 per cent, friction in the engine cuts up another 6 per cent, wind resistance consumes a further 7 per cent and a final 4 per cent goes through friction between the tires and the road surface. Thus we reach the driving wheels with only a very small fraction of the 100 per cent power that started so bravely with the explosion in the cylinder.

Still for all the lost power the modern motor car has plenty of energy to perform its appointed task, but obviously it will not do to let further waste creep in. By giving the car the proper attention, excessive waste will be obviated and the car will go on its way rejoicing.

We shall take the various parts which occur in order and offer suggestions for keeping them at their present level or even, in some cases, reducing them. To begin with, the power loss in the cooling water can be reduced to a certain extent by changes in design. The reader must understand that heat is a form of power. If it is not for other failure, the engine would run more efficiently when it was red hot. The restraining factor is the necessity of preventing the oil film that keeps the metal parts from seizing. There is a point beyond which the temperature of the engine must not go, or the oil will be burned up and the moving parts will seize. To keep the heat from going above this point, the danger point, the cooling system was devised. However, in the attempt to make sure that the oiling of the engine is protected, the designers created a condition where frequently an excessive amount of the engine's vital heat is wasted. That is, more of the heat would be carried away at times than the car actually needs.

There has recently been placed on the market what is known as a thermostatic control of the engine temperature. This takes the form of a valve installed in the water line, which closes when the cooling fluid reaches a certain degree of coolness. This shuts off the circulation of the water and naturally it heats up very rapidly, whereupon the valve opens and permits the water to circulate again. Many makes of cars now include thermostatic control of the engine, but any owner may secure such a device and install it on his car or have it placed there for an inconsiderable amount. When we are on the subject of the engine, it will not be out of order to suggest that leaks of any kind produce waste of power. The cylinder head gasket, if that be the construction of the car, must be kept tight, without leaks or dents. The cylinder head must be carefully tightened, so as to avoid any chance of springing. In this connection it is a good trick to give the threads of the spark plugs, valve plugs, etc., a treatment with some blacking to prevent obscure leaks. This also makes it easy to take out the plugs when it is necessary to do so. It is not easy to reduce the waste of power in the exhaust, though a dirty muffler helps to cut down the power, and this part should be cleaned at intervals. Utilization of the heat of the exhaust in warming the incoming mixture adds to the power, and that is about all the owner can do in this location.

The various devices and accessories driven from the engine add to the consumption of power. When it comes to total up the power so consumed, the car is left with a very small fraction of the power available. The moving parts of the engine, the figure is worth considering. However, it is practically impossible to cut down the power loss in this way, but it is vitally essential that they shall not become excessive through improper or inadequate lubrication. See that the oil is of the best quality and that it is changed at intervals. In cases, owners will find it advisable to install one of the water feeds which have become so popular in the last year or two. This device will serve to keep the carbon deposits down after the combustion chamber has been thoroughly cleaned, though I do not believe that it will remove deposits already formed.

One of the commonest forms of power waste is the use of too rich a mixture. When twice the amount of gasoline is used than is actually needed by the engine, this is a waste of the most direct kind. At the present time every car owner ought to be absolutely certain that he is using a properly proportioned mixture. If he cannot make sure himself, he should go to the service station and have the experts there tell him what is what. In addition to the waste of fuel, the use of too large a proportion of gasoline, allows the liquid gas to form in the combustion chamber and forces its way down into the oil reservoir, where it destroys the efficiency of the lubricant.

Coming to the rest of the mechanism, we find that the clutch is a prodigious power consumer, unless it is kept properly adjusted to prevent slipping. The thrust bearing and throwout collar should be lubricated at proper intervals. Any sign of failure in the clutch calls for immediate action.

The transmission is another part of the mechanism that inevitably consumes power, but not excessively, if it is kept in proper working order. The matter of lubrication is of vital importance and should be attended to carefully. If any mechanical trouble develops in the transmission, there is enormous power wastage. Misalignment, broken gear, teeth worn bearings, etc., are causes of transmission failure that entail power losses. Neglect of the oiling of the transmission is a common cause of trouble in the transmission.

Next we came to the universals, and these hard working parts must be kept well lubricated all the time. The rear axle unit is always a potential location of power loss. This unit ought to be cleaned out three times a year, and after being flushed out, it should be filled with fresh lubricant. Mechanical trouble in the rear axle should have instant attention, for it means heavy power waste. The brakes, if they are in such a state as to naturally heat up very rapidly, whereupon the valve opens and permits the water to circulate again. Many makes of cars now include thermostatic control of the engine, but any owner may secure such a device and install it on his car or have it placed there for an inconsiderable amount. When we are on the subject of the engine, it will not be out of order to suggest that leaks of any kind produce waste of power. The cylinder head gasket, if that be the construction of the car, must be kept tight, without leaks or dents. The cylinder head must be carefully tightened, so as to avoid any chance of springing. In this connection it is a good trick to give the threads of the spark plugs, valve plugs, etc., a treatment with some blacking to prevent obscure leaks. This also makes it easy to take out the plugs when it is necessary to do so. It is not easy to reduce the waste of power in the exhaust, though a dirty muffler helps to cut down the power, and this part should be cleaned at intervals. Utilization of the heat of the exhaust in warming the incoming mixture adds to the power, and that is about all the owner can do in this location.

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The various devices and accessories driven from the engine add to the consumption of power. When it comes to total up the power so consumed, the car is left with a very small fraction of the power available. The moving parts of the engine, the figure is worth considering. However, it is practically impossible to cut down the power loss in this way, but it is vitally essential that they shall not become excessive through improper or inadequate lubrication. See that the oil is of the best quality and that it is changed at intervals. In cases, owners will find it advisable to install one of the water feeds which have become so popular in the last year or two. This device will serve to keep the carbon deposits down after the combustion chamber has been thoroughly cleaned, though I do not believe that it will remove deposits already formed.

One of the commonest forms of power waste is the use of too rich a mixture. When twice the amount of gasoline is used than is actually needed by the engine, this is a waste of the most direct kind. At the present time every car owner ought to be absolutely certain that he is using a properly proportioned mixture. If he cannot make sure himself, he should go to the service station and have the experts there tell him what is what. In addition to the waste of fuel, the use of too large a proportion of gasoline, allows the liquid gas to form in the combustion chamber and forces its way down into the oil reservoir, where it destroys the efficiency of the lubricant.

Coming to the rest of the mechanism, we find that the clutch is a prodigious power consumer, unless it is kept properly adjusted to prevent slipping. The thrust bearing and throwout collar should be lubricated at proper intervals. Any sign of failure in the clutch calls for immediate action.

The transmission is another part of the mechanism that inevitably consumes power, but not excessively, if it is kept in proper working order. The matter of lubrication is of vital importance and should be attended to carefully. If any mechanical trouble develops in the transmission, there is enormous power wastage. Misalignment, broken gear, teeth worn bearings, etc., are causes of transmission failure that entail power losses. Neglect of the oiling of the transmission is a common cause of trouble in the transmission.

Next we came to the universals, and these hard working parts must be kept well lubricated all the time. The rear axle unit is always a potential location of power loss. This unit ought to be cleaned out three times a year, and after being flushed out, it should be filled with fresh lubricant. Mechanical trouble in the rear axle should have instant attention, for it means heavy power waste. The brakes, if they are in such a state as to naturally heat up very rapidly, whereupon the valve opens and permits the water to circulate again. Many makes of cars now include thermostatic control of the engine, but any owner may secure such a device and install it on his car or have it placed there for an inconsiderable amount. When we are on the subject of the engine, it will not be out of order to suggest that leaks of any kind produce waste of power. The cylinder head gasket, if that be the construction of the car, must be kept tight, without leaks or dents. The cylinder head must be carefully tightened, so as to avoid any chance of springing. In this connection it is a good trick to give the threads of the spark plugs, valve plugs, etc., a treatment with some blacking to prevent obscure leaks. This also makes it easy to take out the plugs when it is necessary to do so. It is not easy to reduce the waste of power in the exhaust, though a dirty muffler helps to cut down the power, and this part should be cleaned at intervals. Utilization of the heat of the exhaust in warming the incoming mixture adds to the power, and that is about all the owner can do in this location.

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"ASK ME"

Questions Answered by
Barney Oldfield

Q.—My Ford touring car has a jerky motion on low speed. What is the cause and remedy?
F. R. INDIAN.

A.—If the engine is not misfiring I would look for a bad or slipping clutch or a worn universal. Motions you mention are due to those causes.

Q.—Where can I get parts for a Hert-Brook? How is the correct way to line up front wheels?
C. R. H.

A.—You can get Hert Brooks parts from the Puritan Machine Works, Detroit, Mich.
In lining up front wheels adjust the tie rod so that the toe-in or gather of the wheels is about a half inch. That is, the wheels come together in the middle. The camber or spread at the top should be the same. That is the distance from one wheel to the other front one should be a half inch less at the bottom than at the top.

Q.—What gives power to motors? Three men have been arguing the point and leave it to you. One says gasoline, another compression, and another explosion. What is the answer?
L. W. B.

A.—To make the matter as clear as I can without giving deductions of a technical nature, power is had from the expanding gases or explosions of gasoline. The gasoline itself has no power to act. It is said to have potential energy which is let loose only after a spark causes an explosion—rapid expansion of gases. Thus the power derived from the exploding charge is the answer.

Q.—You recently advised against spending. Does this tie to thirty-five miles an hour hurt a car? My engine has a tendency to miss when the throttle is this open. What is the cause?
C. M. M.

A.—It does no great harm to run thirty to thirty-five miles per hour, but the faster you run the greater wear on the mechanism of your car. From twenty to thirty miles per hour is best.

Usually misfiring at high speeds due to carburation is caused by leanness of the mixture.

Q.—What carbon remover do you recommend? Does a constant stream of air of gas from the breather tube to the engine oil pan indicate loss of compression and poorly fitting rings? Does carbon in one cylinder on the piston of which new rings have been installed indicate the cylinder is out of round and needs rebores? J. E. R.

A.—I am not attracted to compounds as carbon removers. I believe in scraping or burning it out by means of oxygen as the better method.

The breather is there to relieve crankcase compression and if the vapor is not there in any great volume there is normal leakage. If there is much gasoline vapor the rings are badly worn or piston worn. The division of oil between the rings needs for rebores. It depends upon how the rings were fitted. New rings don't mean well-fitting rings. Sometimes certain rings when new actually permit oil leakage and carbonaceous in this stop.

Remove your cylinder head and measure up pistons and cylinders.

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